



United States  
Department of  
Agriculture

Forest  
Service

Intermountain Region

Forest Health Protection  
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Route To:

Subject: Fiscal Year 2004 Consolidated State and Private Forestry Reporting (Your ltr. 9/9/04)

To: Chief

Enclosed are the narrative responses followed by the FHPIS tables for the 2004 insect and disease conditions in Region 4.

Insect activity continues to increase in 2004. Most of the mortality is a result of lingering drought conditions. Douglas-fir beetle-affected acres more than doubled to 178,100. Fir engraver beetle-affected acres are seven times more than 2003 at 199,300. Jeffrey pine beetle killed over 11,000 trees along the Nevada/California border as compared to 600 in 2003. Mountain pine beetle killed over 3 million trees across nearly 700,000 acres, a 63 percent increase in acreage. For the third consecutive year, mountain pine beetle killed over a million pine trees on the Sawtooth National Recreation Area and the Salmon-Challis National Forest areas in Idaho. On a positive note, acres defoliated by the western spruce budworm decreased significantly.

The digital data will be sent under separate cover. If you have any questions, please call Kathleen Matthews at 208-373-4239 (e-mail [kmatthews03@fs.fed.us](mailto:kmatthews03@fs.fed.us)) or Dayle Bennett at 373-4227 (e-mail [ddbennett@fs.fed.us](mailto:ddbennett@fs.fed.us)).

/s/ William W. Boettcher  
WILLIAM W. BOETTCHER  
Director, State and Private Forestry

cc: Kathleen Matthews, Dayle D Bennett, William Boettcher, Paul Ries, Patty Bates, Janet A Valle, Jill L Wilson, Gregg DeNitto, Steve Munson, Frank Sapiro

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Insects: Native

Douglas-fir beetle

*Dendroctonus pseudotsugae*

Region 4: Idaho, Utah, and Wyoming

Host: Douglas-fir

Douglas-fir beetle-caused tree mortality increased dramatically across the Region for the second consecutive year. In 2003, R-4 reported 88,700 acres affected; compared to approximately 178,100 acres in 2004. Acres affected by state were southern Idaho-99,600; Utah-49,100; and Wyoming-29,000. The largest concentrations of mortality were located on the Salmon-Challis (over 58,400 acres) and the Bridger-Teton (over 25,000 acres) National Forests. Additional areas with high levels of mortality include the Ashley National Forest with over 12,000 acres affected and the Bureau of Land Management lands with over 10,200 acres affected in Utah and Idaho. Nearly all R-4 National Forests had some level of Douglas-fir beetle-caused tree mortality.

Douglas-fir tussock moth

*Orgyia pseudotsugata*

Region 4: Idaho, Nevada and Utah

Hosts: Douglas-fir, true firs

Total acreage defoliated by Douglas-fir tussock moth in 2004 decreased by 27 percent from 2003. In 2004, only 8,800 acres of defoliation were reported compared to over 12,000 acres defoliated in 2003. The majority of the defoliation (5,800 acres) occurred on the Humboldt-Toiyabe National Forest in Elko County, Nevada. In Idaho, tussock moth defoliation continued at a reduced level on approximately 2,500 acres of the Sawtooth National Forest and Bureau of Land Management lands in the Owyhee Mountains.

Fir engraver beetle

*Scolytus ventralis*

Region 4: California, Idaho, Nevada, and Utah

Hosts: grand fir, red fir, subalpine fir, white fir

Fir engraver beetle-caused tree mortality continued to increase Region-wide due to lingering drought conditions. Aerial survey recorded approximately 199,300 acres with mortality in 2004; a significant increase over the 26,000 acres reported in 2003. Areas most affected by this insect include the Humboldt-Toiyabe National Forest (37,000 acres) in Nevada; the Dixie (34,200

acres), Uinta (18,600 acres) and Manti-La Sal (13,400 acres) National Forests in Utah; and the Boise (10,000 acres) and Payette (8,600 acres) National Forests in Idaho. Additional tree mortality caused by this insect was also observed on state and private land: about 23,900 acres in Utah; and, approximately 1,500 acres in Idaho.

Forest tent caterpillar

*Malacosoma disstria*

Region 4: California, Idaho, Nevada, Utah, and Wyoming

Hosts: aspen, cottonwood

In 2004, forest tent caterpillar defoliation in Utah affected approximately 12,300 acres of aspen, maple and oak compared to a similar acreage figure for all of Region 4 in 2003. In 2004, defoliation on private lands in Utah accounted for over 7,000 acres. Over 1,500 acres were affected on the Wasatch-Cache National Forest.

In Nevada, acres of suspected forest tent caterpillar defoliation in 2003 and 2002 were ground checked in 2004. Forest tent caterpillar was not found in any of the areas; however, Cytospora canker was prevalent in many of the areas mapped. Most of the reported forest tent caterpillar damage for 2003 and 2002 should be attributed to a combination of Cytospora canker, borers, and drought.

Jeffrey pine beetle

*Dendroctonus jeffreyi*

Region 4: California, Nevada

Host: Jeffrey pine

Jeffrey pine beetle activity increased dramatically along the Nevada/California border. In 2004, over 11,700 trees were killed affecting 5,600 acres compared to 600 trees killed within 400 acres in 2003. The Humboldt-Toiyabe National Forest experienced the greatest amount of Jeffrey pine beetle activity affecting 11,500 trees over 5,400 acres.

Mountain pine beetle

*Dendroctonus ponderosae*

Region 4: California, Idaho, Nevada, Utah, and Wyoming

Hosts: limber, lodgepole, Jeffrey, ponderosa, western white, and whitebark pines

Mountain pine beetle-caused tree mortality increased Region-wide for the second consecutive year. Approximately 3,554,800 trees were killed over 691,500 acres in 2004. This represents an acreage increase of 63 percent compared to 1,806,800 trees killed over 258,800 acres in 2003. Three distinct areas comprise the majority of the tree mortality. The first is on the Salmon-

Challis National Forest, including the Sawtooth National Recreation Area, in central Idaho. In this area, a total of 1,199,800 lodgepole and whitebark pine trees were killed over 289,300 acres. Mortality in this area began in 1998 and is currently the largest mountain pine beetle outbreak area in the Region. The second area is in northern Utah on the Wasatch-Cache and Ashley National Forests. Here, the outbreak (in its second consecutive year) expanded by 63 percent from 297,000 trees killed across 50,800 acres in 2003 to 1,267,700 trees killed across 136,700 acres in 2004. The third area, located on the Bridger-Teton National Forest in Wyoming, increased dramatically for the third consecutive year. In this area, tree mortality increased 82 percent from approximately 240,000 trees over 37,000 acres in 2003 to 982,700 trees across 212,000 acres in 2004. Lodgepole and five needle pines were the most affected tree species in all three areas.

Pine engraver beetle

*Ips pini*

Region 4: Idaho and Utah

Hosts: lodgepole and ponderosa pine

Mortality due to pine engraver beetle remained at endemic levels (approximately 600 trees over 300 acres) throughout the Region. Beetles killed scattered groups of young ponderosa pine, mostly on the Bridger-Teton National Forest in Wyoming.

Spruce beetle

*Dendroctonus rufipennis*

Region 4: Idaho, Utah, and Wyoming

Host: spruce

Spruce beetle-caused tree mortality remained relatively static in 2004. Spruce beetle killed approximately 124,400 trees over 38,300 acres in 2004, a 23 percent acreage increase compared to 149,900 trees over 29,600 acres in 2003. Utah continues to have the largest outbreak affecting 123,100 trees killed on 37,100 acres in 2004. Most of the spruce beetle-caused tree mortality occurred on the Dixie (40,300 trees, 9,200 acres), Manti-La Sal (33,100 trees, 8,300 acres), Ashley (15,600 trees, 8,100 acres), and Wasatch-Cache (15,500 trees, 4,900 acres) National Forests. Because of the narrow window associated with fading spruce, no spruce mortality was aerially mapped on the Bridger-Teton National Forest in 2004. However, spruce beetle activity was noted in 2003 and in all likelihood continued to kill additional spruce in 2004.

Western pine beetle  
*Dendroctonus brevicomis*

Region 4: Idaho  
Host: ponderosa pine

In 2004, the number of ponderosa pine trees killed decreased by 50 percent from 12,800 trees over 8,100 acres in 2003 to 6,400 trees over 7,200 acres. Most of the mortality occurred on the Payette (2,100 trees, 2,100 acres) and the Boise (1,700 trees, 1,900 acres) National Forests. An additional 1,100 trees were also killed over 1,300 acres of private land in Idaho.

Western spruce budworm  
*Choristoneura occidentalis*

Region 4: Idaho, Utah, and Wyoming  
Hosts: Douglas-fir and true firs

Western spruce budworm-caused tree defoliation decreased significantly. In 2003, over 203,500 acres were defoliated compared to 33,100 acres in 2004. Budworm attributed defoliation was reported on most of the national forests in southern Idaho, Utah, and western Wyoming. Most of the defoliation in 2004 occurred on the Dixie National Forest (14,900 acres) in southern Utah. Elevated levels of defoliation also occurred on the Caribou-Targhee (3,000 acres), the Payette (2,600 acres), and the Sawtooth (2,400 acres) National Forests in Idaho and the Fishlake National Forest (2,500 acres) in Utah. Budworm also affected 1,800 acres of private lands in the Region.

Pinyon ips  
*Ips confusus*

Region 4: California, Nevada, and Utah  
Host: Pinyon pine

In 2004, aerial surveys continued in areas of previously unsurveyed pinyon pine with recent and older tree mortality recorded without differentiation. In 2004, approximately 6,184,300 pinyon pine trees were killed over 942,800 acres in Utah, Nevada and eastern California. Most of the mortality occurred on National Forest and other Federal lands in Nevada. In Nevada, approximately 2,540,200 trees were killed across 413,100 acres on the Humboldt-Toiyabe National Forest. Another 1,538,700 trees were killed across 266,000 acres of Bureau of Land Management and Department of Defense lands. Tree mortality on private lands in Nevada accounted for 285,500 trees killed on 30,100 acres. In Utah, most of the pinyon pine mortality affected the Dixie, Ashley, and Manti-La Sal National Forests, where 476,100 trees died over 63,800 acres. Additional mortality (412,700 trees, 71,700 acres) occurred on Tribal, Bureau of

Land Management and National Park lands. Tree mortality on private lands in Utah was 82,900 trees within 12,500 acres. Historically, pinyon-juniper forests have not been aerially surveyed. However, the dramatic increase in pinyon mortality in 2001 and 2002 as a result of the extended drought and increased pinyon ips populations necessitated documenting this widespread mortality.

Insects: Nonnative

European gypsy moth

*Lymantria dispar*

Region 4: Idaho, Nevada, and Utah

Hosts: various deciduous species

The gypsy moth was first detected in Utah in 1988. Since then, male moths have been captured in various locations nearly every year. In 2004, one male gypsy moth was captured in Wyoming and three were captured in Utah. The Wyoming adult male moth was captured in Jackson Hole. The Utah captures occurred in either residential or campground areas with one adult male moth each in Salt Lake, Summit, and Duchesne Counties. Delimitation trapping in 2005 will occur at the Salt Lake and Summit County sites in Utah and at the Wyoming site. The Duschene County site will not be delimited because the high elevation at which the adult moth was caught is not conducive to gypsy moth development.

Balsam Woolly Adelgid

*Adelges piceae* Ratzeburg

Region 4: Idaho

Hosts: subalpine and grand firs

This introduced aphid attacks trees of all size classes and is easily identified by the presence of masses of white “woolly” females on the stem bark and branches. Tree mortality can occur within 2-3 years after the initial infestation. North of the Salmon River the insect is now a common forest pest causing substantial mortality in subalpine fir stands. In southern Idaho, the insect is presently found only in isolated cases on residential firs in McCall, Idaho extending as far south as Cascade Reservoir.

Diseases: Native

Annosum root disease

*Heterobasidion annosum*

Region 4: California, Idaho, Nevada, Utah, and Wyoming

Hosts: bitterbrush, chokecherry, Douglas-fir, true firs, spruce and Jeffrey, lodgepole, and ponderosa pines

This disease can be found throughout the Region, but mostly as a saprophyte on dead trees, stumps, roots, and cull logs or fallen stems. The fungus occasionally kills young ponderosa pine especially in plantations on droughty soils.

Armillaria root disease

*Armillaria* spp.

Region 4: Idaho, Nevada, Utah, and Wyoming

Hosts: Douglas-fir, grand fir, pines, spruce, and subalpine fir

Evidence of Armillaria root disease can be found throughout the Region but it functions primarily as a weak pathogen or saprophyte causing little direct mortality. In southern Utah, it may act as a primary pathogen, killing mature and immature ponderosa pine and mature fir and spruce on cool sites at high elevation.

Black stain root disease

*Ophiostoma wageneri*

Region 4: Idaho, Nevada, and Utah

Host: pinyon pine

Aerial detection and follow-up ground surveys have discovered about two-dozen root disease centers in pinyon pine stands in the Intermountain Region. Perennial infections caused mortality of individual pinyon pine over 50-acres of the Bureau of Land Management Burley District in southern Idaho. In Utah and Nevada, the host is more prevalent. The infected acreage totals 1,150 acres on the Humboldt-Toiyabe National Forest in Nevada and 1,350 acres on the Dixie and Manti-LaSal National Forest in Utah. In many cases the areas with black stain have now been infested with pinyon ips.

Dwarf mistletoes  
*Arceuthobium* spp.

Region 4: Idaho, Nevada, Utah, and Wyoming  
Hosts: Douglas-fir, pines, true firs, spruce, and western larch

These plant parasites remain the most widespread and frequently observed disease within the Intermountain Region. Regional incidence by major host species is estimated as follows: lodgepole pine 50 percent, ponderosa pine 20 percent, and Douglas-fir 20 percent. These percentages by host type represent stands having some level of infection.

Diseases: Nonnative

Whitepine blister rust  
*Cronartium ribicola*

Region 4: California, Idaho, Nevada, and Wyoming  
Hosts: limber, whitebark, bristlecone, western white and sugar pines

This introduced disease is common throughout its hosts range in southern Idaho, western Nevada, eastern California, and western Wyoming. No infection has been found or reported in Utah; but the disease has been identified very close to the Utah border in southern Idaho and to the west in the Jarbidge Mountains of northeastern Nevada. The new observations of whitepine blister rust in eastern Nevada are cause for concern because they are close to highly sensitive bristlecone pine populations in Great Basin National Park and elsewhere. Overall, five-needed pine trees are of low occurrence and frequency in the Intermountain Region. Often relegated to high alpine areas, these pines grow slowly but provide important ecosystem functions such as providing shade and stabilization of snow retention for watershed integrity, recreation, aesthetics, and wildlife habitat and usage.

Declines and Complexes

Subalpine fir mortality complex

Region 4: Idaho, Nevada, Wyoming, and Utah  
Host: subalpine fir

Decline and die-off of subalpine fir started in the late 1980's in the Intermountain Region with peak mortality periods occurring during mid-1990 when over a million trees were affected by this complex. Although there are a number of pathogens involved in this complex, the primary insect causing subalpine fir mortality is the western balsam bark beetle; *Dryocoetes confusus*. Drought, heat stress, and winter drying, compounded by overstocked and overmature stand

conditions also contribute to subalpine fir mortality. In 2004, approximately 840,500 subalpine fir died over 308,200 acres. The Bridger-Teton National Forest in Wyoming lost 161,200 trees over 74,100 acres. The Humboldt-Toiyabe National Forest in Nevada lost 86,300 trees over 12,900 acres. The Dixie National Forest in Utah lost 76,900 trees across 14,700 acres. Tree mortality on private lands across the region accounted for 73,600 trees on 18,500 acres.

#### Aspen decline

Region 4: Idaho, Utah and Wyoming

Host: Quaking Aspen

The acreage of aspen forests has been declining in the Intermountain Region for many years, and aspen clones have died in many areas. According to Bartos and Campbell, in the past 125 years on forested lands, aspen forests in Utah have decreased 59 percent, 61 percent in Idaho, and 53 percent in Wyoming. There are many reasons for the reduction of aspen forests including fire exclusion, old age, insects, disease, drought, and conversion to other ecosystems such as conifer forests.

FOREST PEST INFORMATION SYSTEM (FPIS)

Region: 4

Date: 1/5/2005

Name of Preparer: Kathleen Matthews

Pest	State	Land-ownership Class	Acres Infested (thousands) (1 decimal)	Volume Killed (MCF) (1 decimal)	Number of Trees Killed (thousands)	Number of SPB Spots
<b>DFB</b>	CO	1	0.4	55.3	1.8	
		2	0	0	0	
		3	0	0	0	
	ID	1	93.2	5,080.4	169.3	
		2	2.8	122.1	4.1	
		3	3.6	174.7	5.8	
	UT	1	26.9	3,466.4	115.5	
		2	9.3	830.6	27.7	
		3	12.9	1,609.9	53.7	
	WY	1	27.1	2,504.1	83.5	
		2	1.1	84.9	2.8	
		3	0.8	78.4	2.6	
<b>DFTM</b>	ID	1	0.7			
		2	1.8			
		3	0.3			
	NV	1	5.7			
		2	0			
		3	0.3			
	<b>FEB</b>	1	1.8	121.2	4.0	
		2	0	0.6	0	
		3	0.3	25.3	0.8	
		1	24.8	879.8	29.3	
		2	1.7	47.2	1.6	
		3	14.4	471.2	15.7	
		1	34.2	5,900.9	196.7	
		2	17.8	1,919.3	64.0	
		3	1.5	466.7	15.6	
	UT	1	76.1	11,786.5	392.9	
		2	2.8	413.7	13.8	
		3	23.9	3,745.0	124.8	

Pest	State	Land-ownership Class	Acres Infested (thousands) (1 decimal)	Volume Killed (MCF) (1 decimal)	Number of Trees Killed (thousands)	Number of SPB Spots
<b>MPB</b>	CA	1	0.3	6.3	0.3	
		2	0	0	0	
		3	0	0.1	0	
	ID	1	322.6	20,400.3	1,275.0	
		2	4.0	217.0	13.6	
		3	4.7	168.5	10.5	
	NV	1	3.6	267.9	13.4	
		2	0.3	8.5	0.4	
		3	0.1	1.4	0.1	
	UT	1	131.8	23,690.4	1,184.5	
		2	0.7	58.3	2.9	
		3	11.4	1,427.7	71.4	
	WY	1	188.6	14,577.7	911.1	
		2	7.5	409.2	25.6	
		3	15.9	736.7	46.0	
<b>PIPS*</b>	CA	1	30.8	61.4	490.8	
		2	17.6	19.1	153.1	
		3	4.2	5.5	43.7	
	CO	1	0	0	0	
		2	0.3	0.4	3.1	
		3	0	0	0	
	NV	1	413.1	317.5	2,540.2	
		2	266.0	192.3	1,538.7	
		3	45.3	42.0	335.9	
	UT	1	64.8	60.2	481.3	
		2	71.7	51.6	412.7	
		3	29	23.1	184.8	
<b>SB</b>	ID	1	1.1	108.4	1.2	
		2	0	0	0	
		3	0	1.3	0	
	UT	1	35.1	10,437.1	116.0	
		2	0.2	42.7	0.5	
		3	1.8	589.8	6.6	
	WY	1	0.1	10.1	0.1	
		2	0	0	0	
		3	0	0	0	

\* *Ips confusus* Pinyon ips

Pest	State	Land-ownership Class	Acres Infested (thousands) (1 decimal)	Volume Killed (MCF) (1 decimal)	Number of Trees Killed (thousands)	Number of SPB Spots
<b>WPB</b>	ID	1	4.9	90.8	4.5	
		2	0.3	6.5	0.3	
		3	2.0	32.1	1.6	
<b>WSB</b>	ID	1	11.8			
		2	0.4			
		3	0.7			
	UT	1	18.2			
		2	0			
		3	1.8			
	WY	1	0.2			
		2	0			
		3	0			
<b>SAF</b>	ID	1	67.5	3,060.0	153.0	
		2	1.5	53.3	2.7	
		3	30.2	191.3	9.6	
	NV	1	14.9	1,996.7	99.8	
		2	0	0	0	
		3	0.6	32.1	1.6	
	UT	1	50.1	4,566.4	228.3	
		2	0.5	43.1	2.2	
		3	10.9	1,337.1	66.9	
	WY	1	128.0	5,156.5	257.8	
		2	2.9	247.6	12.4	
		3	1.1	123.5	6.2	
<b>FTC</b>	UT	1	4.6			
		2	0.1			
		3	7.6			